

71533 U.S. PTO



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71702 U.S. PTO
08835559

Sir:

Transmitted herewith for filing is the patent application of small entity

Inventor: Andrea DREI

For: "DEVICE FOR THE ADVANCEMENT OF BARS, PARTICULARLY NARROW BARS, IN
AUTOMATIC LOADERS"

Enclosed are:

☒ Small Entity Verified Statement

☒ Three sheets of drawing on strong paper (M.P.E.P. 608.02 - rev.81)

☒ An Assignment of the Invention to I.E.M.C.A. S.p.A. INDUSTRIA ELETTROMECCANICA
COMPLESSI AUTOMATICI, Via Granarolo, 167 - 48018 FAENZA (Prov. of Ravenna)-ITALY

☐ A Certified Copy of a _____ Application

☐ Associate Power of Attorney.


CLAIMS AS FILED				
(1) for	(2) number filed	(3) number extra	(4) rate	(5) basic fee \$ 385.=
Total claims	7 - 20=		x\$ 11.=	
Independent claims	1 - 3=		x\$ 40.=	
			Total filing Fee	\$ 385.=

☒ Please charge my Deposit Account No. 13-3860 in the amount of
US\$ 385.=. A duplicate copy of this sheet is enclosed.

☒ The Commissioner is hereby authorized to charge any additional fees which may
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Milan, April 3, 1997
Italy


Guido MODIANO
Attorney of Record

[illegible]

S P E C I F I C A T I O N

Be it known that I, _____

residing at FAENZA (Prov. of Ravenna), ITALY

of which the following description in connection with the accompanying drawings is a specification, like reference characters on the drawings indicating like parts in the several figures.

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BACKGROUND OF THE INVENTION

The present invention relates to a device for the advancement of bars, particularly narrow bars, in automatic loaders.

In conventional automatic loaders, shortcomings are observed which substantially consist in their excessive longitudinal bulk and in the difficulty in achieving the advancement of bars having a very small diameter, on the order of 1-2 mm.

SUMMARY OF THE INVENTION

A principal aim of the present invention is therefore to provide a device which allows to obviate the above mentioned drawbacks, which are typical of conventional loaders.

This aim is achieved by means of a device for the advancement of bars, particularly narrow bars, in automatic loaders provided with a loading system for a plurality of bars, with a mechanism for the individual release of said bars, and with a pusher provided with a collet which is adapted to receive the rear end of the released bar, characterized in that it comprises: guiding means, whereon supporting elements for a bar released from said system and a carriage provided with grip elements for said bar are slideable, said carriage being actuated between an initial position, wherein said grip elements are activated so as to grip a bar deposited on said supporting elements, and a final position, whereat said bar is released by said grip elements after insertion in the collet of the pusher and is secured in the spindle of an automatic lathe, said pusher

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being supported so as to move parallel to itself; and means for locking and actuating said pusher after said carriage between an offset position and a position where it is aligned with the bar deposited on said supporting elements 5 when said carriage is in the final position.

BRIEF DESCRIPTION OF THE DRAWINGS

Further particularities of the present invention will become apparent from the following description of a preferred embodiment, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

10 figure 1 is a partially schematic elevation view of the device according to the invention;

figure 2 is a plan view of the device of figure 1;

figure 3 is a sectional view, taken along the plane III-III of figure 1;

15 figure 4 is a sectional view, taken along the plane IV-IV of figure 1;

figure 5 is a sectional view, taken along the same plane as figure 4, but in a different (subsequent) operating condition;

20 figure 6 is a sectional view, taken along the plane VI-VI of figure 1;

figure 7 is a sectional view, taken along the plane VII-VII of figure 2.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the above figures, the reference 25 numeral 1 designates a housing for containing the device, which comprises two uprights 2 and 3 which are interconnected by two horizontal and parallel rods 4 and 5 lying on a vertical plane.

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One end of the post 7 protrudes downwards from the carriage 6, and an arm 10 is rigidly coupled thereto and supports a set of three equidistant V-shaped blades 11. Likewise, one end of the post 8 protrudes above the carriage 6 and an arm 13 is rigidly coupled thereto supporting two equally V-shaped blades 14 which are co-planar with respect to the interspaces between the blades 11. A lever 15 is radially rigidly coupled to the shaft 12, and the stem of a fluid-actuated jack 16 is articulately connected to said lever; the cylinder of said jack is articulately supported in a bracket (not shown) which is fixed to the carriage 6.

The carriage 6 is moved along the rods 4 and 5 by means
30 of a transmission composed of a chain 19 wound around two

pinions 20 and 21, one of which is motorized. The chain 19 has two ends which are coupled to the carriage 6 and comprises two portions which are parallel to the rods 4 and 5.

5 A plurality of brackets 22 are slidably supported on the rods 4 and 5, along the portion between the upright 2 and the carriage 6, and bear supports 23 provided with recesses which are open upwards and being V-shaped like the blades 11.

10 These recesses are substantially aligned along a line A passing through the point where the internal vertices of the blades 11 and 14 coincide when they are moved closer to each other. The line A is coaxial to the rotation axis of the spindle of the lathe to be fed with the bars.

15 The brackets 22 are inter-connected by tie rods 24 slideable therein so as to allow the brackets 22 to stack up against the upright 2 when the carriage 6 moves to the left. Vice versa, when the carriage shifts to the right, the tie rods 24 allow the sequential traction of the brackets 22 and
20 their mutual spacing by an extent that is equal to the length of said tie rods.

When the carriage 6 is fully shifted to the right, i.e., when the brackets 22 are spaced one from the other, it is possible to deposit, on the supports 23 and between the
25 blades 11 and 14, a bar 17 arriving from the plane 18 and released by the individual selection device.

The actuation of the jack 16, and therefore the closure of the blades 11 and 14 to grip the released bar, are controlled by a device which detects beforehand the presence
30 of the bar 17 on the supports 23.

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Said device comprises a flat plate 25 provided with a sensor 26 and fixed on a vertical shaft 26a which is rotatably supported in the carriage 6.

The upper end of the shaft 26a protrudes upwards from the carriage 6 and an arm 27, which supports a roller 28, is coupled to said end.

The roller 28 is meant to cooperate with a locator 29 which is fixed to the top of the upright 3 and allows to reset the flat plate 25 once it has been released, as will become apparent hereinafter, to allow the intervention of the elements provided for the advancement of the bar towards the lathe.

In order to retain the flat plate 25 in the reset position, i.e., at right angles to the rods 4 and 5, there is provided a lever 30 which is pivoted in the carriage 6 below the flat plate 25. Said lever has an arm 31 protruding downwards at an angle and supporting a roller 32 which rotatably engages a straight cam 33 which runs parallel to the bars 4 and 5 below the carriage 6.

The second arm 34 of the lever 30 is adapted to act as retainer for the flat plate 25.

The cam 33 has such a profile as to prevent the flat plate 25, by means of the arm 34, from rotating into the position which is parallel to the bars 4 and 5 over a certain extent which lies between the locator 29 and the upright 2. When the carriage 6 is near the upright 2, the cam 33 lifts the arm 31 of the lever 30, causing the arm 34 to move downwards until the flat plate 25 is allowed to rotate freely.

With the flat plate 25 in this position, it is possible

to act on the bar 17 with a device which feeds the bar into the lathe to perform the intended machining operations. Said device includes two shoulders 35, which protrude from the uprights 2 and 3 and wherebetween a guide 36 for a chain 37 is provided. The chain 37 is closed in a loop about respective toothed pulleys (not shown), one of which is motorized. The guide 36 is rotatable with respect to the shoulders 35 and has a longitudinal slot through which a flap 38 protrudes laterally; a bar pusher 39 is rigidly coupled to said flap, is parallel to A, and is provided with a collet to grip the bar to be fed. The flap 38 is rigidly coupled axially to the chain but it is rotatable thereabout.

The guide 36 is supported by a plurality of bushes 40 which are inter-connected by a longitudinal member 41.

The bushes 40 are provided with lateral slots to allow, like the guide, the passage of the flap 38 during the advancement of the bar pusher.

An arm 42 is radially rigidly coupled to the longitudinal member 41 and is connected to a jack 43, whose actuation causes the rotation of the guide through an angle of 90° which allows the bar pusher 39 to oscillate from a lowered position below the guide (figure 4) to a raised position in which it is aligned with A.

The operation of the described device is as follows.

Assume that the carriage 6 is arranged proximate to the right upright 3, with the blades 11 and 14 spaced apart, and that the bar pusher 39 is also fully shifted to the right, below the guide 36, as shown in figure 4. When the carriage 6 is in the indicated position, the brackets 22 are spaced one from the other, so that by actuating the individual

selection device it is possible to remove a single bar 17 from the magazine and deposit it on the supports 23. At this point, the chain 19 is actuated and, by moving the carriage 6 towards the left in the direction F, causes the abutment 5 of the flat plate 25 against the end of the rod which is deposited on the supports 23. During this step, the flat plate is kept by the lever 30 on a plane which is perpendicular to the carriage advancement direction.

By means of the sensor 26, the jack 16 is then 10 actuated, and by means of the posts 7, 8 and pinion 9 actuates the closure of the blades 11 and 14, which grip the bar 17 and insert it in the spindle of the lathe as the stroke of the carriage 6 continues.

During the stroke of the carriage 6, after the blades 15 11 and 14 have clamped around the bar 17, the cam 33 actuates the oscillation of the lever 30 into a position for disengagement from the flat plate 25, which by means of spring means is returned to an arrangement which is parallel to the bars 4 and 5 outside the axial space occupation of 20 the bar.

When the carriage 6 has reached the left stroke limit and the brackets 22 have stacked up against the upright 2, the jack 43 is actuated, causing the oscillation of the bar pusher 29 into a position that is coaxial to the advancement 25 line A.

At this point, the bar 17 is inserted in the collet of the bar pusher 39, again by means of the chain 19.

Then, after actuating the jack 16 in the direction for opening the blades 11-14, the bar pusher 39 can act on the 30 bar 17 and push it into the spindle of the lathe for the

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intended machining steps.

During the operation of the bar pusher 39, the carriage 6 waits in the forward position until said bar pusher returns with the final machining stub of the bar 17.

5 Once the return stroke of the bar pusher 39 has been performed, by actuating the jack 16 in the direction for closing the blades 11-14 it is possible to extract the bar stub from the collet of the bar pusher by acting on the chain 19.

10 The bar pusher 39 can return to the initial position and the carriage 6, with the stub, is returned to the initial position, which is close to the upright 3, until the roller 28 engages on the locator 29.

This engagement causes the rotation of the flat plate 15 25 into the position that lies at right angles to the rods 4 and 5, where it is retained by the oscillation of the lever 30 allowed by the cam 33.

Accordingly, the actuation of the jack 16 causes the opening of the blades and the fall of the bar stub always in 20 the rear position of the loader.

The cycle is repeated in the above described manner.

It is evident that the described invention perfectly achieves the intended aim and objects.

In particular, the grip of the bar by the blades 25 prevents the danger of deformations during the pre-advancement stroke in the loader, prior to insertion in the collet of the bar pusher, furthermore the safe grip of the bar allows to achieve high speeds and to perform sharp braking actions, which would otherwise not be allowed, 30 reducing cycle timings.

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Numerous modifications and variations are possible in the practical embodiment of the invention and all are within the scope of the same inventive concept expressed in the appended claims.

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WHAT IS CLAIMED IS:

1 1. A device for the advancement of bars, particularly
2 narrow bars, in automatic loaders provided with a loading
3 system for a plurality of bars, with a mechanism for the
4 individual release of said bars, and with a pusher provided
5 with a collet which is adapted to receive the rear end of a
6 released bar, comprising: guiding means, whereon supporting
7 elements for a bar released from said system and a carriage
8 provided with grip elements for said bar are slideable, said
9 carriage being actuated between an initial position, where
10 said grip elements are actuated so as to grip a bar
11 deposited on said supporting elements, and a final position,
12 where said bar is released by said grip elements after
13 inserting the pusher in the collet and is secured in the
14 spindle of an automatic lathe, said pusher being supported
15 so as to move parallel to itself; and means for locking and
16 actuating said pusher after said carriage between an offset
17 position and a position where it is aligned with the bar
18 deposited on said supporting elements when said carriage is
19 in the final position.

1 2. A device according to claim 1, comprising: a flat
2 plate articulated on said carriage and adapted to oscillate
3 between a position for abutment on said bar and an inactive
4 position; and a sensor mounted on said flat plate and
5 adapted to detect the abutment of said flat plate against
6 one end of said bar and to activate said grip elements to
7 grip said bar; said flat plate being retained in said
8 abutment position by a lever which is articulated on said
9 carriage and is controlled by a cam, said cam being adapted

10 to actuate said lever from a position for retaining said
11 flat plate in said abutment position into a position where
12 said flat plate can assume said inactive position.

1 3. A device according to claim 1, wherein said grip
2 elements are constituted by V-shaped blade elements which
3 are actuated in mutual contrast to grip the released bar
4 interposed between them.

1 4. A device according to claim 3, wherein said blade
2 elements are fixed on two respective posts which are
3 parallel and slidingly supported in said carriage and have
4 racks which mesh with a pinion, with which a lever is
5 radially rigidly coupled, a fluid-actuated jack mounted on
6 said carriage acting on said lever.

1 5. A device according to claim 4, wherein said
2 supporting elements are constituted by brackets provided
3 with supports for said released bar, said brackets being
4 connected by tie rods slideable therein to allow the
5 brackets to stack up on the side towards which said carriage
6 advances.

1 6. A device according to claim 5, wherein said pusher
2 is connected to a flexible traction element slideable in a
3 guide, means being provided for locking and rotating said
4 pusher from said offset position to an aligned position for
5 pushing on said bar when said carriage is in said final
6 position and said flat plate is in said inactive position.

1 7. A device according to claim 6, wherein said guide is
2 rotatably supported and said pusher is connected to said
3 flexible traction element by means of a flap which is guided
4 through a slot of said guide, said guide being actuated by a
5 fluid-actuated jack between said offset and aligned

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6 positions of said pusher with respect to said bar.

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ABSTRACT OF THE DISCLOSURE

A device for the advancement of bars, particularly narrow bars, in automatic loaders provided with a inclined supporting plane or with another loading system for a plurality of bars and with a mechanism for the individual
5 release of the bars, comprising: guides, whereon supporting elements for a bar released from the plane and a carriage provided with grip elements for said bar can slide, the carriage being actuated between an initial position, where the grip elements are actuated so as to grip a bar deposited
10 on the supporting elements, and a final position, where the bar is released by the grip elements and is secured in the spindle of an automatic lathe; a pusher which is supported so as to move parallel to itself; and actuators for actuating the pusher after the carriage between an offset
15 position and a position wherein it is aligned with the bar deposited on the supporting elements when the carriage is in the final position.

FIG.1

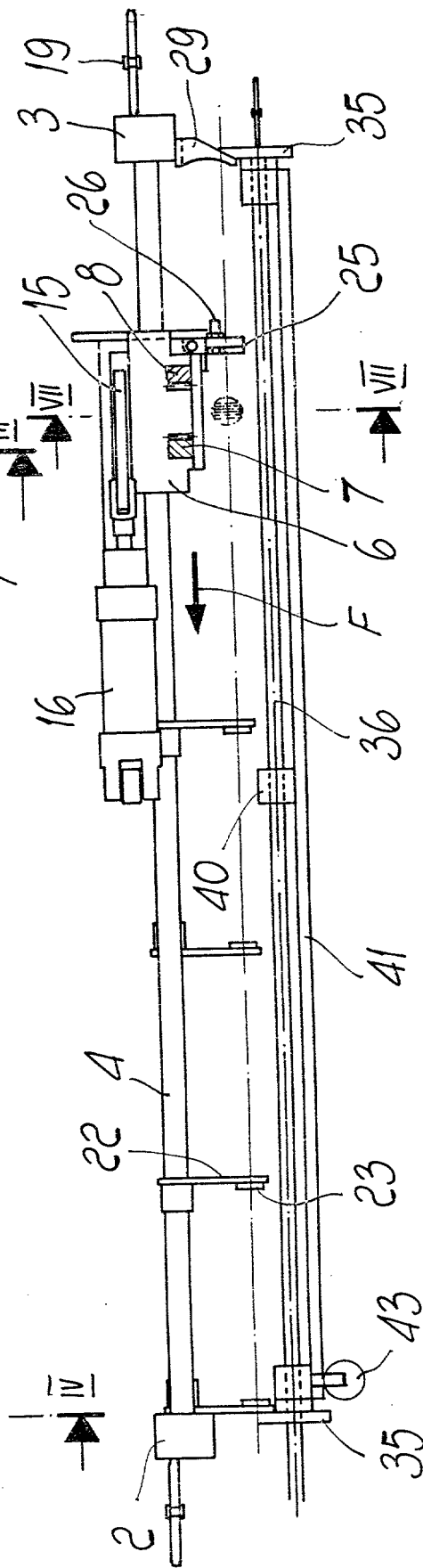
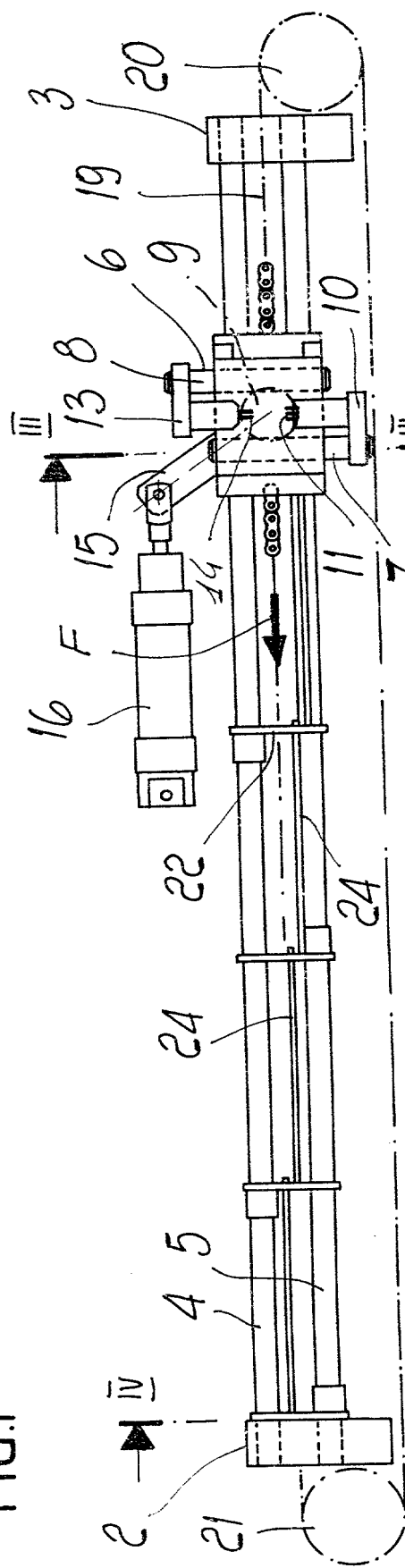


FIG.2

FIG.7

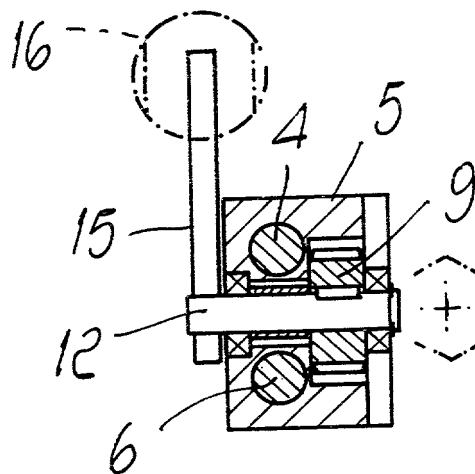
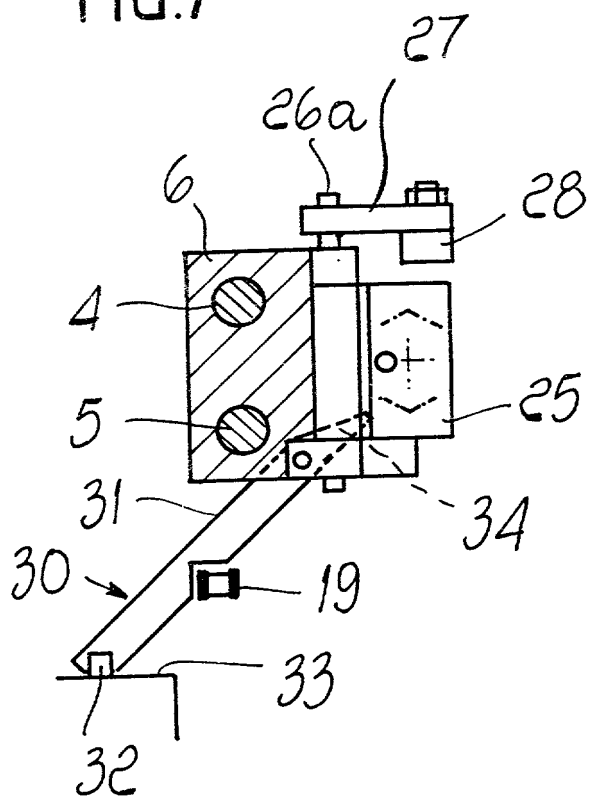
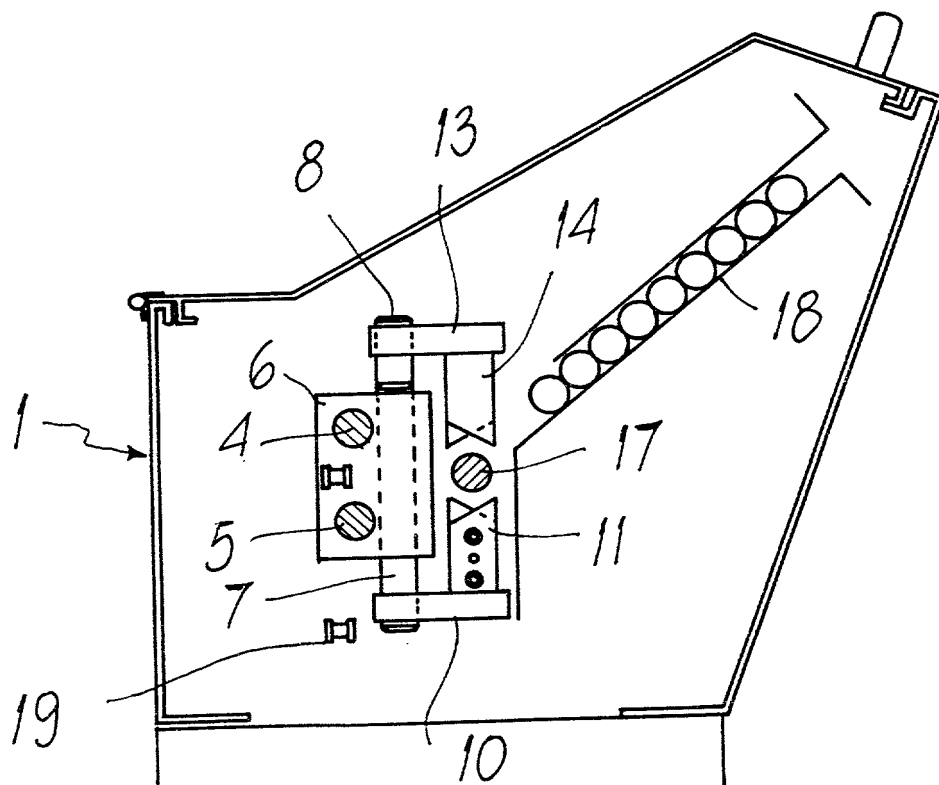


FIG.6

FIG.3



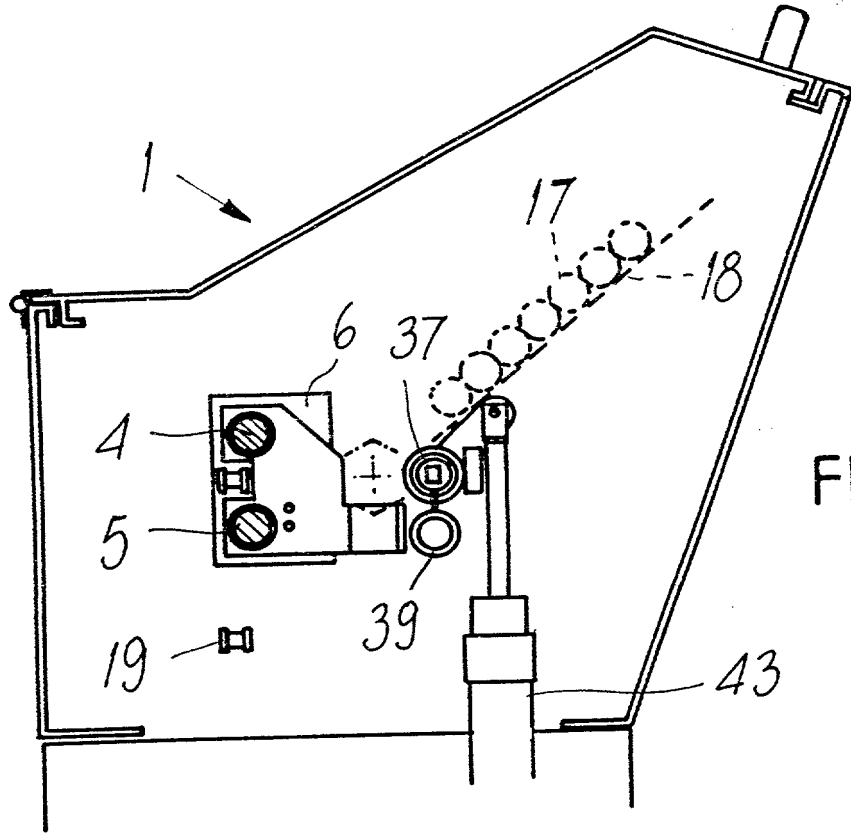


FIG. 4

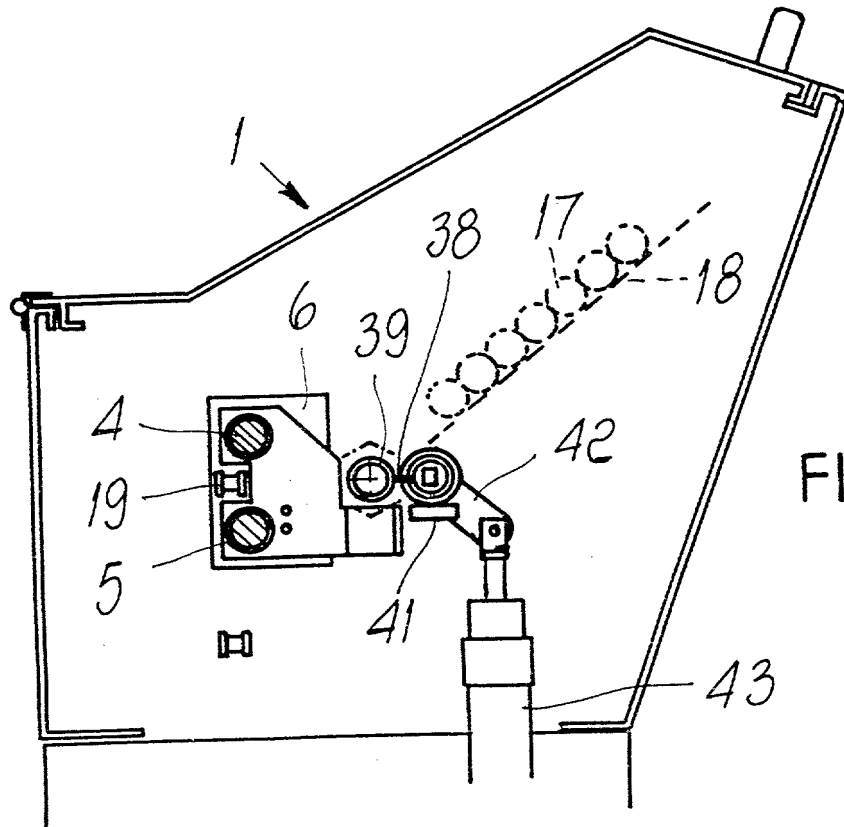


FIG. 5

Applicant or Patentee: Andrea DREI Attorney's
Serial or Patent No.: _____ Docket No. 29727/GM/sg
Filed or Issued: _____
For: "DEVICE FOR THE ADVANCEMENT OF BARS, PARTICULARLY NARROW BARS, IN AUTOMATIC LOADERS"

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) and 1.27(c)) - SMALL BUSINESS CONCERN

I hereby declare that I am

- ☐ the owner of the small business concern identified below:
☒ an official of the small business concern empowered to act on behalf of
the concern identified below:

NAME OF CONCERN I.E.M.C.A. S.p.A. INDUSTRIA ELETTROMECCANICA COMPLESSI AUTOMATICI
ADDRESS OF CONCERN Via Granarolo, 167 - 48018 FAENZA (Prov. of Ravenna) - ITALY

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled "DEVICE FOR THE ADVANCEMENT OF BARS, PARTICULARLY NARROW BARS, IN AUTOMATIC LOADERS" by inventor(s)

Andrea DREI
described in

- ☒ the specification filed herewith
☐ application serial no. _____, filed _____
☐ patent no. _____, issued _____

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who could not qualify as a small business concern under 37 CFR 1.9(d) or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e). *NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

NAME _____
ADDRESS _____
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

NAME _____
ADDRESS _____
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Giorgio GELLINI
TITLE OF PERSON OTHER THAN OWNER Managing Director
ADDRESS OF PERSON SIGNING Viale Baccarini, 64 - 48018 FAENZA (Prov. of Ravenna) - ITALY
SIGNATURE March 27, 1997 DATE March, 27, 1997

Declaration and Power of Attorney for patent Application

Modulo di Dichiarazione Per Domanda di Brevetto

Italian Language Declaration

Io, sottoscritto inventore, dichiaro con il presente che:

Il mio domicilio, recapito postale e cittadinanza sono quelli indicati in calce accanto al mio nome,

Che mi reputo in buona fede essere l'inventore originario, primo e unico (qualora un solo nominativo appaia elencato appresso) o il coinventore (qualora i nominativi siano piu' di uno) primo e originario dell'invenzione da me rivendicata, e per la quale faccio domanda di brevetto. Tale invenzione e' chiamata

**"DISPOSITIVO PER L'AVANZAMENTO DI BARRE,
IN PARTICOLARE DI BARRE SOTTILI, NEI**

CARICATORI AUTOMATICI"

e la sua descrizione e':
(contrassegnare uno dei due)

☒ qui acclusa.

☐ E' stata presentata il _____ as

Come Domanda Numero _____

ed e' stata rettificata il _____
(se applicabile)

Dichiaro inoltre con il presente di aver letto e compreso il contenuto della specificazione sopra indicata, comprese le rivendicazioni, come rettificata da qualsiasi emendamento a cui si sia accennato sopra.

Riconosco il mio dovere di rivelare informazioni che costituiscano materiale per l'esame della presente domanda secondo i termini del Titolo 37, Codice dei Regolamenti Federali, Comma 1.56(a)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**"DEVICE FOR THE ADVANCEMENT OF BARS,
PARTICULARLY NARROW BARS, IN AUTOMATIC
LOADERS"**

the specification of which:
(check one)

☒ is attached hereto.

☐ was filed on _____ as

Application Serial Number _____

and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

Italian Language Declaration

Con il presente rivendico i benefici di priorit  per l'estero come stabilito dal Titolo 35, Codice degli Stati Uniti, Comma 119, per qualsiasi domanda di brevetto (o brevetti) straniera o per qualsiasi certificato d'invenzione sotto elencato, ed ho anche elencato qui sotto tutte le domande di brevetto e certificati d'invenzione stranieri aventi una data di presentazione anteriore a quella della domanda per la quale si rivendica la precedenza:

Prior foreign applications
Domanda dall'estero precedenti

BO95A000602 **ITALY (ITALIA)** **December 22, 1995 (22 dicembre 1995)**

(Number) (Country) (Day/Month/Year Filed)
(Numero) (Paese) (Giorno, Mese de Anno di Presentazione)

Priority claimed
Priorita Rivendicata

☐ ☒
Yes No
Si No

(Number) (Country) (Day/Month/Year Filed)
(Numero) (Paese) (Giorno, Mese de Anno di Presentazione)

☐ ☐
Yes No
Si No

(Number) (Country) (Day/Month/Year Filed)
(Numero) (Paese) (Giorno, Mese de Anno di Presentazione)

☐ ☐
Yes No
Si No

Con il presente rivendico il beneficio previsto dal Titolo 35, Codice degli Stati Uniti, Comma 120, per qualsiasi domanda (o domande) di brevetto sotto indicata, ed entro i limiti nei quali il materiale indicato in ciascuna delle domande di brevetto non e' stato rivelato nella precedente domanda di brevetto americana nel modo previsto dal primo paragrafo del titolo 35, Codice degli Stati Uniti, Comma 112, riconosco il mio dovere di rivelare il materiale d'informazione, cos  come viene definito nel Titolo 37, Codice dei Regolamenti Federali, Comma 1.56(a), che possa essere venuto ad aggiungersi nel periodo intercorso tra la data di presentazione della domanda precedente e la data nazionale o internazionale PCT di presentazione di questa domanda:

I hereby claim the benefit under Title 35, United States Code,  120 of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code,  112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations,  1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)
(Numero di serie della
Domanda di Brevetto)

(Filing Date)
(Data di presentazione)

(Stato Giuridico)
(Brevetto, In attesa
di Brevetto, Abbandonato)

(Status)
(patented, pending,
abandoned)

(Application Serial No.)
(Numero di serie della
Domanda di Brevetto)

(Filing Date)
(Data di presentazione)

(Stato Giuridico)
(Brevetto, In attesa
di Brevetto, Abbandonato)

(Status)
(patented, pending,
abandoned)

Dichiaro inoltre con il presente che tutte le informazioni da me fornite sono in fede mia vere, e che tutte le affermazioni da me fatte sono in fede mia verde; dichiaro inoltre che quando ho fatto queste affermazioni ero al corrente del fatto che false dichiarazioni fatte intenzionalmente sono punibili con multa o incarcerazione, o ambedue, secondo quanto stabilito dalla sezione 1001 del Titolo 18 del Codice degli Stati Uniti, e che tali informazioni intenzionalmente false possono mettere a repentaglio la validit  della domanda di brevetto rilasciata in base ad esse.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Italian Language Declaration

PROCURA: Io, sottoscritto inventore, nomino con la presente il seguente Procuratore (o Procuratori) o Agente (Agenti) che s'incarica di perseguire questa pratica e di portare a termine tutte le operazioni necessarie all'Ufficio Brevetti e all'Ufficio Marchi di Fabbrica pertinenti a questa pratica. (Elencare il Nome e il Numero di Matricola)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

Guido MODIANO (Reg. No. 19,928)

Albert JOSIF (Reg. No. 22,917)

Daniel J. O'BYRNE (Reg. No. 36,625)

Recapito per la Corrispondenza:

MODIANO & ASSOCIATI
Via Meravigli, 16
20123 MILANO - ITALY - Europe

Telefonare a: (Nome e Numero)

(02) 86.92.442

Nome completo dell'inventore primo e unico

ANDREA DREI

Full name of sole or first inventor

Andrea DREI

Firma dell'inventore

Andrea Drei

Data

27 marzo 1997

Inventor's signature

Date

March 27, 1997

Residenza

FAENZA (RA) - ITALIA

Residence

FAENZA (Prov. of Ravenna) - ITALY

Cittadinanza

ITALIANA

Citizenship

Italian

Recapito o Casella Postale

S. BERNARDO 16

Post Office Address

Via S. Bernardo, 16 - 48018 FAENZA

(Prov. of Ravenna) - ITALY

Nome completo del secondo inventore

Full name of second or joint inventor

Firma del secondo inventore

Data

Inventor's signature

Date

Residenza

Residence

Cittadinanza

Citizenship

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Post Office Address

(Si prega di fornire stesse informazioni e firme di eventuali terzi e più coinventori.)

(Supply similar information and signature for third and subsequent joint inventors.)